CLAIMS

1. A method of vaccinating a mammal to a selected antigen, the method comprising administering to a mammal a vaccine composition comprising a cytokine-coated cell and said selected antigen.

2. A method of vaccinating a mammal to a selected antigen, the method comprising administering to a mammal a vaccine composition comprising a cytokine-coated cell, wherein said cytokine-coated cell comprises said selected antigen and is admixed with an engineered cytokine.

3. The method of claim 1 or claim 2 wherein said vaccine composition further comprises an opsonin-enhanced cell.

4. The method of claim 3 wherein said opsonin of said opsonin-enhanced cell is selected from the group consisting of mannose binding protein or the alpha chain of C3b.

5. The method of any one of claims 1 or 2 wherein said cytokine of said cytokine-coated cell comprises a lipid.

6. The method of claim 5 wherein said cytokine comprises a GPI moiety.

7. The method of claim 5 wherein said cytokine comprises a fatty acid.

8. The method of claim 7 wherein said fatty acid is palmitate.

9. A method of vaccinating a mammal to a selected antigen, the method comprising; contacting an APC in vitro with a cytokine-coated cell comprising a selected antigen and a cytokine, for a time sufficient to permit internalization of said selected antigen by said APC; and administering said contacted APC to a mammal.

10. A method of vaccinating a mammal to a selected antigen, the method comprising:

contacting an APC in vitro with a cytokine-coated, opsonin-enhanced cell comprising a selected antigen and an opsonin, for a time sufficient to permit internalization of said selected antigen by said APC; and

administering said contacted APC to a mammal.

11. The method of claim 9 or claim 10 wherein said cytokine is an exogenous engineered cytokine.

12. The method of claim 9 or claim 10 wherein said cytokine comprises a lipid.

13. A method of vaccinating a mammal to a selected antigen, the method comprising administering to the mammal a vaccine composition comprising a cytokine-coated cell, wherein said cytokine is a ligand for the GM-CSF receptor.

14. The method of claim 13, wherein said ligand for the GM-CSF receptor is GM-CSF.

15. A method of vaccinating a mammal to a selected antigen, the method comprising; administering to a mammal a vaccine composition comprising a cytokine-coated cell, wherein said cytokine is a ligand for one of the following receptors: the IL-2 receptor, the IL-4 receptor, the IL-6 receptor, the IL-10 receptor, the IL-12 receptor, the TNF-α receptor, the IFN-γ receptor, a chemokine receptor.

16. The method of claim 15, wherein said ligand is selected from the group consisting of: IL-2, IL-4, IL-6, IL-10, IL-12, TNF-α, IFN-γ, or a chemokine.

17. The method of any one of claims 1, 9, 10, 13 or 15, wherein said cell of said cytokine-coated cell is a pathogenic cell.

18. The method of claim 17 wherein said pathogenic cell is a malignant tumor cell.

19. The method of claim 17 wherein said cell of said pathogenic cell is selected from the group consisting of: a bacterium, a virus, a fungus, a cell of a parasite.

20. The method of claim 17, wherein said vaccine composition further comprises an opsonin-enhanced pathogenic cell.

21. A method of vaccinating a mammal to a selected antigen, the method comprising administering to a mammal a vaccine composition comprising an opsonin-enhanced pathogenic cell and a cytokine-coated pathogenic cell, wherein said opsonin is selected from the group consisting of mannose binding protein or the alpha' chain of C3b.

22. The method of any one of claims 1, 9, 10, 13, 15 and 21, wherein said cytokine-coated cell is substantially unable to divide in vitro.

23. The method of any one of claims 1, 9, 10, 13, 15 and 21, wherein said vaccine composition is attenuated.

24. The method of any one of claims 1, 9, 10, 13, 15 and 21, wherein said cytokine is an antitumor cytokine.

25. The method of any one of claims 1, 9, 10, 13, 15 and 21, wherein said cytokine is extremely bioactive, natively bioactive, or suprabioactive.

26. A composition comprising a cytokine-coated pathogenic cell, which comprises an engineered cytokine.

27. The composition of claim 26 wherein said cytokine is a ligand for the GM-CSF receptor.

28. The composition of claim 27 wherein said cytokine is a ligand for one of the following receptors: the IL-2 receptor, the IL-4 receptor, the IL-6 receptor, the IL-10 receptor, the IL-12 receptor, the TNF-α receptor, the IFN-γ receptor, a chemokine receptor.

29. The composition of claim 26 wherein said cytokine-coated cell is admixed with an exogenous engineered cytokine.

30. The composition of claim 26 or claim 29 wherein said engineered cytokine comprises a lipid.

31. The composition of claim 26 wherein a recombinant nucleic acid encoding said cytokine has been artificially introduced into said cytokine-coated cell and wherein said cytokine-coated cell expresses said engineered cytokine.

32. The composition of claim 26 wherein said engineered cytokine comprises a transmembrane segment or a GPI-moiety.

33. The composition of claim 26 wherein said cytokine-coated cell is a malignant tumor cell.

34. The composition of claim 26 wherein said cell of said cytokine-coated cell is selected from the group consisting of: a bacterium, a fungus, a virus, a cell of a parasite.

35. A composition comprising a host cell comprising a cytokine-coated cell into which a recombinant nucleic acid encoding an antigen has been artificially introduced and; wherein said host cell expresses said antigen.

36. The composition of any one of claims 26 or 35, which further comprises an opsonin-enhanced cell.

37. A composition comprising a cytokine-coated cell, wherein said cell is substantially unable to divide in vitro.

38. The composition of claim 37, further comprising an opsonin-enhanced cell which is substantially unable to divide in vitro.

39. The composition of one of claims 37 or 38, further comprising a physiologically compatible buffer.

40. A vaccine composition comprising cytokine-coated cells and a pharmaceutically acceptable carrier.

41. The vaccine composition of claim 40 further comprising opsonin-enhanced cells.

42. An engineered cytokine comprising GM-CSF and a lipid.